a device for controlling the passage of fluid through a pipe or duct, esp. an automatic device allowing movement in one direction only.
Introduction

Process Components Ltd is a leading manufacturer and supplier of commodity components and spares for the powder and liquid processing and handling industries.

At Process Components Ltd, our objective is to meet the needs of the process industries for commodity goods, components, spares and service.

With the well known Mucon brand and the ability to specify and provide spares and services in relation to other brands including; KEK, Gardner and PPS. An extensive portfolio including Iris Diaphragm Valves, Butterfly Valves, powder flow promoting systems, including vibrating screens from our Promo-Flow range and Aeration Pads as well as Level Indication devices. Providing process equipment spares from Sifter Screens through to full bearing assemblies, mill grinding media and all manner of drive components.

Our UK headquarters are situated in Cheshire, with a USA subsidiary in Pennsylvania. There is also support from a network of representatives throughout the world, all able to provide applications engineering, sales and service.

PRODUCTS

- Process control valves, manual & powered
  - Iris Diaphragm
  - Butterfly
  - Sliding Disc
- Bulk Solids discharge equipment
- Single point level indicators
- Wedge wire, woven wire & nylon sieve screens
- Flexible sleeves and liners
- Grinding media for universal, air classifier and cone mills
- Mixer spares & services including agitator replacements & repairs
- Sifter shafts, paddle assemblies, drive components, seals & gaskets
- Metal Detectable Seals for all types of process equipment

SERVICES

- Full on-site process machine servicing and maintenance
- Re-pin, re-screen or rebuild grinding media for universal mills
- Bearing assembly inspect, rebuild and test
- Bespoke design services

BRANDS

Providing components, spares and services relating to:

- Mucon – The original Iris Diaphragm Valve manufacturer since 1946
- KEK – Synonymous with powder sieving and processing technology
- Gardner – Mixing, Processing and Blending equipment
- PPS – Ultra fine grinding air classification mills and filtration systems
Mucon equipment has been used extensively in the bulk materials handling industries for over 60 years, during which time the company has built up an excellent reputation for both product reliability and service.

Industries search for increased economy and efficiency, demands faster movement of greater quantities of bulk solids for an ever growing range of applications. This is where the specialist knowledge and proven expertise of Mucon is unrivalled.

Whatever kind of powder or granule you need to handle, there will be a suitable Mucon product that will move it, measure it, control it and keep it moving quickly and smoothly.

Mucon Iris Diaphragm Valves are used world-wide because of their superb flow control characteristics and versatility in duties ranging from creating a gland seal around extruded plastic pipe to controlling the flow of live fish from transport containers.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>AD</th>
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<th>K</th>
<th>E</th>
<th>JS</th>
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<td>✓</td>
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</table>
The Series AD Iris Diaphragm Valve is the most popular and widely used inline version. This flagship product provides the very best features of the Iris Diaphragm Valve in a robust and cost effective solution.

**Mucon Series AD Valve Standard Features**

- Double diaphragm for in-line applications with no leakage to atmosphere
- Robust construction for medium to heavy duties, handling materials up to 1600 kg/m³
- In-situ diaphragm adjustment reducing maintenance time
- Proven design suitable for frequent operation
- Diaphragms selected to suit application
- 316 stainless steel or full construction *
- Multi-notching to enhance flow control *
- Coated standard construction *

* Optional

---

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Nett Weight</th>
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<td>11</td>
<td>470</td>
<td>19.1</td>
</tr>
</tbody>
</table>

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg.
Mucon Series AD Valves

**Valve Type** | **Nom Bore** | **Notch Arrangement** | **A** | **B** | **C**
---|---|---|---|---|---
AD3 | 80 | Fully | 11 | 14 | 154
AD4 | 100 | Fully | 14 | 11 | 154
AD4 | 100 | Half | 6 | 11 | 66
AD6 | 150 | Fully | 16 | 10 | 160
AD6 | 150 | Half | 7 | 10 | 70
AD8 | 200 | Fully | 16 | 10 | 160
AD8 | 200 | Half | 9 | 10 | 90
AD10 | 250 | Fully | 18 | 9 | 162
AD10 | 250 | Half | 9 | 10 | 90
AD12 | 300 | Fully | 16 | 10 | 160
AD12 | 300 | Half | 7 | 10 | 70
AD15 | 380 | Fully | 27 | 6 | 162
AD15 | 380 | Half | 15 | 6 | 90
AD18 | 450 | Fully | 35 | 5 | 175
AD18 | 450 | Half | 14 | 5 | 70

Unless otherwise stated all dimensions in mm.
### Mucon Series AD Handwheel Operated Valves

![Diagram of Mucon Series AD Handwheel Operated Valves](image)

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Nett Weight</th>
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<td>300</td>
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</table>

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg
Mucon Series AD Handwheel Operated Valves

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
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<tbody>
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<td>AD15</td>
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<td>11</td>
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<tr>
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<td>11</td>
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</table>

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg
The series ADP valve with its innovative drive arrangement allows light but robust construction for frequent operations in harsh environments

Mucon ADP Power Operated Valve Standard Features

- Double diaphragm for in-line applications with no leakage to atmosphere
- Suitable for heavy duty materials up to 1600kg/m3
- Quick operation, capable of opening or closing in one second
- Belt driven for quiet operation
- Drive ring supported on bearings for smooth operation
- Valve is sealed against ingress of dust
- Low profile compact design
- Fully open, closed and intermediate electric proximity sensors
- Electric or air motor operation to suit application
- Bore sizes are 150mm, 200mm and 300mm
- 316 stainless steel product contact part *
- Special switch/solenoid packages for hazardous locations *
- Surface coatings to suit corrosive environments *

* Optional

Technical

Air motor operation by D1 kW 3000rpm reversible air motor using E1 l/m of lubricated compressed air at 5.6bar.


Valve fitted with open, closed and trickle position indication sensors. All terminated in an IP67 plug and socket assembly. Rated at 5A @ 250v AC or 5A @ 30v DC.

Port sizes for air motor control valve must be a minimum of 1/2” BSP to achieve the required air flow rate.
## Mucon ADP Power Operated Valves

**Range Overview**

Mucon ADP Power Operated Valves are designed for applications requiring precise control and operation. These valves are equipped with features such as lifting points, top mating flanges, and bottom mating flanges, ensuring easy installation and maintenance.

### Valve Specifications

The table below provides the nominal bore sizes and dimensions for different valve types. The dimensions are given in millimeters, and weights are in kilograms. The table includes the following columns:

- **Valve Type**: ADP06, ADP08, ADP12
- **Nominal Bore**: Various sizes
- **Dimensions and Weights**: Various measurements and weights

### Dimensions

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>F1</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>J1</th>
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<td>467</td>
<td>240</td>
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<td>160</td>
<td>160</td>
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</table>

### Dimensions and Weights

| Valve Type | Nominal Bore | L  | M  | N  | P  | R  | S  | T  | U  | W  | X  | Y  | Z  | A1 | B1 | C1 | D1 | E1 | Nett Weight |
|------------|--------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|    |             |
| ADP06      | 150          | 417| 10 | 8  | 3  | M8 | 15 | 12 | 3  | 9  | 203| 228| 142| 158| 228| 1/4" BSP   | 0.56| 1000       | 14 |
| ADP08      | 200          | 430| 10 | 8  | 3  | M8 | 15 | 12 | 3  | 9  | 254| 280| 193| 209| 280| 1/4" BSP   | 0.56| 1000       | 17 |
| ADP12      | 300          | 510| 10 | 8  | 4  | M10| 20 | 15 | 4  | 11 | 378| 400| 295| 355| 400| 3/8" BSP   | 1.00| 1700       | 30 |

*Unless otherwise stated, all dimensions in mm, weights given for aluminium unit in kg.*
Mucon Series BD Valves

The series BD Valve offers a simplified construction compared to the in-line IDVs, reducing the cost, size and weight.

Mucon Series BD Valve Standard Features

- Double diaphragm for in-line applications with no leakage to atmosphere
- Suitable for lighter duty materials up to 560 kg/m³
- Available as standard with thumbscrew locking for 50mm to 80mm bores, giving infinite flow control
- Trigger locking mechanism on other sizes
- Diaphragms selected to suit application
- Aluminium construction

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Nett Weight</th>
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<td>51</td>
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<td>7.3</td>
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</table>

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg
The series E Iris Diaphragm Valve has been the workhorse of the Mucon range for many years. Its extremely robust construction and reliable drive elements make it suitable for the most arduous duties.

Mucon Series E Valve Standard Features

- Double diaphragm for in-line applications with no leakage to atmosphere
- Strong construction make the E Valves suitable for products over 1600 kg/m³
- Electrical or Pneumatic operation to suit available power supplies
- In-situ diaphragm adjustment
- Internal bearings and high quality materials make the E Valve suitable for frequent operation
- Diaphragms selected to suit application
- Fully open, closed and intermediate electric or pneumatic limit switches
- 316 stainless steel product contact parts *
- Automatic closure system in case of air or electrical failure on pneumatic valves *
- Special packages to suit hazardous locations *
- A variety of surface coatings to suit corrosive environments *

*Optional
Technical

Pneumatic cylinder operation using T litres of compressed air at 6barg per stroke.

Available with standard open, closed and trickle reed switches. Also available with intrinsically safe proximity sensor assembly supplied with flying leads.

Standard reed switches rated AC/DC 10–30v, 1a<100mA, contact rating (peak) 6W.

Standard pneumatic connection without solenoid option:
ED6/8/10 – 3/8” BSP
ED12/15/18 – 1/2” BSP

With solenoid option connection is made via 8mm pneumatic fitting, supplied.
Technical


Full load current @ 230v ~ 1.65A @ 415v ~ 0.95A.

Fitted with open, closed and trickle limit switches as standard. Access to terminations through a 20mm blanked hole.

Switches rated at 10A @ 125v – 250v AC or 10A @ 30v DC

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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</tbody>
</table>

*Unless otherwise stated, all dimensions in mm / weights given in kg.*
Mucon Series H Valve Standard Features

- Single diaphragm for dust tight closure
- Simple construction suitable for materials up to 720 kg/m³
- In-situ diaphragm adjustment
- Hand operated
- Diaphragms selected to suit application
- Additional positioning notches to set valve orifice in variety of open positions (150mm and 200mm only)
- Fixing positions on the lower flange for bagging off spigot (150mm and 200mm only)
- Coated valve body components
- Additional notches for enhanced flow regulation (not available on 150mm and 200mm models)
- Quick release transit cover for extra security during transportation
- Quick release adaptor for valve mounting

* Optional

This low cost, compact valve has been fitted to many thousands of IBCs the world over. Its popularity with operators owes much to its ease of operation, reliability and excellent regulation of discharge rates.

### Mucon Series H Valves

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>P</th>
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</table>

Unless otherwise stated, dimensions in mm, weights given in kg.
The series JS Valve is specifically designed for fitting to big bag discharge stations to allow controlled product discharge.

**Mucon Series JS Valve Standard Features**

- Designed specifically for FIBCs, suitable for materials up to 1200 kg/m³
- Single diaphragm for dust tight closure
- Concentric opening/closing for ideal flow characteristics
- Multi-notched body for maximum flow control
- Tapered valve inlet prevents damage and aids flow
- Fabric diaphragms ensure gentle but sure shut off
- Robust construction
- Slim design
- Mounting holes on underside only as standard. Drilling of top flange available as optional extra.

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
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</tbody>
</table>

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg.
Mucon Series K Hand Operated Valve Standard Features

- Only the diaphragm comes into contact with the product
- Unique fasteners for rapid assembly
- Easy to clean moulded diaphragm
- Band clamped flange connections on quick release models

Specifically designed for Pharmaceutical, Dairy and Food Industry applications, the series K Valve incorporates the well proven benefits of the Mucon Iris Diaphragm Valve principles.

Meeting the stringent demands of todays process industries for hygiene, including disassembly of equipment without tools and thorough cleaning, the Mucon Series K Valve makes that quantum leap and is the valve to meet todays requirements.

### Mucon Series K Hand Operated Valve Standard Features

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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Unless otherwise stated, all dimensions in mm / weights given in kg.
### Mucon Series K Hand Operated Valves – Bolted

**Diagram**: Diagram of a Mucon Series K hand-operated valve with labeled dimensions and annotations.

**Table**: Table listing valve types, nominal bore sizes, and corresponding dimensions and weights.

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<th>J</th>
<th>K</th>
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*Unless otherwise stated, all dimensions in mm / weights given in kg.*
Mucon K Series Powered Valves

Quick Release Flanges

Bolted Flanges

### Quick Release Flanges

| Valve Type | Nominal Bore | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   | N   | P   | R   | S   | T   | U   | W   | X   | Y   | Z   | A1  | B1  | C1  | D1  | Net Weight |
|------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| KDQ2       | 150          | 156 | 218 | 186 | 178 | 67  | 75  | 15  | 54  | 50  | 119 | 141 | 4   | 75  | 152 | 168 | 4   | 256 | 141 | 278 | 411 | 160 | 118 | 150 | 155 | 7"   | 12.3 |
| KDQ2       | 200          | 206 | 260 | 236 | 228 | 67  | 80  | 15  | 54  | 50  | 119 | 168 | 4.5 | 8   | 202 | 218 | 4   | 276 | 168 | 279 | 410 | 162 | 144 | 150 | 155 | 7"   | 12.5 |

*Unless otherwise stated, all dimensions in mm, weights given for 536 unit with 4hp Motor kg.

### Bolted Flanges

| Valve Type | Nominal Bore | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   | N   | P   | R   | S   | T   | U   | W   | X   | Y   | Z   | A1  | B1  | C1  | D1  | Net Weight |
|------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| KDQSP      | 150          | 156 | 240 | 186 | 178 | 67  | 75  | 15  | 54  | 50  | 119 | 161 | 168 | 10  | 6   | M8  | 203 | 255 | 142 | 142 | 278 | 411 | 160 | 150 | 125 | 7"   | 12.5 |
| KDQSP      | 200          | 206 | 280 | 236 | 228 | 67  | 80  | 15  | 54  | 50  | 119 | 188 | 218 | 10  | 6   | M8  | 254 | 276 | 168 | 168 | 277 | 410 | 162 | 150 | 125 | 7"   | 12.8 |

*Unless otherwise stated, all dimensions in mm, weights given for 536 unit with 4hp Motor kg.
The diagram shows the ideal way in which a Mucon Iris Diaphragm Valve should be installed. If the recommendations are followed, a prolonged diaphragm life will result. The AD, BD, JS & K series of valves have lever slots which allow the control levers to move through 180°. Accordingly, installation requires a combination of through bolts and set screws to be used. If there is any misalignment of the ductwork connected to the valve, this can cause the lever slot to open or close. With a serious misalignment the valve body will be under stress, which could lead to rapid wear taking place and the failure of certain components. All valves are fitted with a label indicating the directions of material flow.

**Installation of a Mucon Valve**

The need for a liner with a Mucon Iris Diaphragm Valve installation may become apparent after the initial run-in period, since they are successful in combating three basic problems:

- Assisting diaphragm opening
- Combating diaphragm wear
- Reducing the effort required to operate a valve where a high static load is imposed on the valve

Liners can be used on their own or with an adaptor.

**Use of Liners**

When a fabric diaphragm is specified, it is always necessary to have a certain weight of material acting downwards to make it open fully. If the material has a tendency to ‘bridge’, often the diaphragm will only partially open. If a flanged liner is hung through the valve with the stainless steel weights sewn in the hem of the liner, this will assist with opening.

**Liners to assist opening**

1. Flanged liner
2. Can be weighted with stainless steel ring if required

**Liners to combat wear**

The length of life of a diaphragm valve is not easily quantified because of the many variables involved such as the number of operations per day, the amount of material passed per day or the abrasiveness of the material. In our experience the life of a diaphragm can vary between a few months and many years. Where the life can be measured in months it is often beneficial to consider the use of a liner.

Liners to assist opening

1. Flanged liner
2. Can be weighted with stainless steel ring if required

**Linatex rubber**

Various powdered materials exert differing pressures on a diaphragm. Normally a Mucon Iris Diaphragm Valve is easily operated, but on occasions some free flowing products exert a high static load on a valve and the control lever becomes difficult to operate. This is largely due to two things:

- The load exerted by the product forces the various layers of diaphragm material tightly together and when the control lever is operated, these try to rotate against each other.
- It has been observed that when a Mucon Iris Diaphragm Valve operates, the material in the column adjacent to the top face of the valve tries to turn as the valve is opened.

Both of these problems can be eliminated by the use of a liner.

1 Flanges must be flat and free from distortion
2 Fixing bolts over and under lever slot must not protrude into the slot
3 For diaphragm length see inside brochure
4 12mm clearance from base of open diaphragm
5 Inlet diameter 5mm smaller than inlet size of valve
6 Discharge diameter 10mm larger than outlet size of valve (except series E)